臺灣南部大氣真菌孢子圖鑑

An Atlas of Airborne Fungal Spores in Southern Taiwan

行政院農業委員會
農業試驗所 鳳山熱帶園藝試驗分所 發行

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序

空中真菌相常受農業、植保及醫學過敏原研究人員所重視，原因無他，真菌常是植物病害及人們引起過敏的致病因子之一，鑑此，國科會在1990年代初期曾由台灣大學植物系陳瑞青教授與中興大學植病系、台灣大學植物系與植病系、國立台北師範學院、文化大學、台南師範學院及行政院農委會農業試驗所鳳山熱帶園藝試驗分所真菌學教授及研究人員共同執行「台灣地區真菌孢子相之研究」，欲將台灣上空的真菌相藉所採集的大氣孢子，了解台灣大氣真菌孢子種類，其豐度或出現頻率，以便提供植物病害保護或預防醫學的過敏原研究。本分所植物保護系研究人員，歷經多年調查真菌孢子，自大氣中捕獲孢子數百種，予以分類並試定其名稱，以了解南部大氣的孢子相，此一部雖僅是在大氣孢子的領域中跨出一步，但因將各種孢子分類定位，具有非常有用的參考價值，值今出版前夕，謹為之序。

行政院農業委員會農業試驗所
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分所長　劉　政　道

序

81 年 8 月，接獲台灣大學植物系教授陳瑞青老師來電話，希望能共同執行一個為期三年的研究計劃，把全台北部、中部、南部及東部各區的大氣孢子能做一個較為詳盡的研究，提供植物病理研究人員及預防醫學研究人員在研究大氣中的真菌相與作物的病害或人類的過敏原等的關係能有更進一步的認識，自此，連續三年的大氣孢子研究於焉展開執行，此一計劃後因各站資料過多，整理耗時，因此延長至 85 年 7 月止，共 3 年 9 個月，隨後欲將全部資料正式發表編印成書，連續開會討論數次，皆因故未能完整發表結果。計劃主持人陳瑞青教授因此希望鳳山熱帶園藝試驗分所能夠單獨發表資料，提供學術單位參考，故將分所的資料單獨彙整如後冊，希各先進不吝賜教。

本系研究人員由 81 年起，即由助理人員蔡淑芬、卯都木文代、郭美妤、薛熙瑋、劉建輝等人協助本計劃，將各種孢子形態拍照、量長度及寬度、建立檔案外，部分文字校正由王智立協助，三年多共約八百餘種不同形態的孢子被蒐集及建檔，所建檔的孢子經過比對形態及顏色兩種性質後分類成有色及無色兩類孢子，隨後文獻中紀錄的孢子形態與建檔中圖樣相同或非常相近者，予以定名，此一過程非常不易，僅約 451 種孢子的形態或與文獻相同而列出，尚有三百餘種形態的孢子不易判別，但希望此書能拋磚引玉提供植物病理研究人員及預防醫學研究人員利用本書檢索表及圖樣與敘述說明進行初步的認識孢子種類及名稱。

由於真菌孢子的形態具有非常特異的外型特徵者極少，大多數的孢子形態皆無非常大的差異足供判定，故學名的鑑定上必有錯誤之處，尚祈各先進能賜正以供改進，最後僅對本計劃的主持人陳瑞青教授表示衷心的感謝，並希望能以本書慰他在天之靈。

行政院農業委員會農業試驗所
鳳山熱帶園藝試驗分所
植物保護系　林正忠

謹以

此書紀念

前國立台灣大學陳瑞青教授

因為他 ———

本書像一粒種子

在台灣大氣真菌相中長出新芽

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壹、檢索表

一、Spore without pigment（Hyaline spores）

I. Long-shape spore(the ratio of spore length/width≧4)

multi-cells, filamentous,175×3 μ ....Fig1. ***Raphidiopsis mediterranea* var. *grandis***

multi-cells, filamentous,175×2 μ .... Fig2. ***Atkinsonella hypoxylon***

multi-cells, filamentous,138×2 μ .... Fig3. ***Pseudocercospora rhapidicola***

multi-cells, filamentous,125×2 μ ....Fig4. ***Leptospora rubella***

multi-cells, truncate at the base, terminal slender,100×10 μ ......Fig5. ***Pseudocercospora*** sp.

multi-cells, filamentous,100×3 μ .... Fig6. ***Gaeumannomyces graminis***

multi-cells, truncate at the base, terminal slender,96×2 μ ....Fig7. ***Cercospora ageraticola***

multi-cells, filamentous,80~96×3 μ .... Fig8. ***Fusarium*** sp.

multi-cells, lunate shape,80×6 μ .... Fig9. ***Fusarium*** sp.

multi-cells, filamentous,80×5 μ .... Fig10. ***Glomerella septospora***

multi-cells, lunate shape,80×4 μ .... Fig11. ***Fusarium*** sp.

multi-cells, filamentous,76~80×5 μ ....Fig12. ***Pseudocercospora neriella***

multi-cells, truncate at the base, terminal slender,75×12.5 μ .... Fig13. ***Trichoconis caudata***

multi-cells, filamentous,74×2.5 μ ....Fig14. ***Septoria leucanthemi***

multi-cells, filamentous, 72×3 μ .... Fig15. ***Nodulosphaeria*** sp.

multi-cells(6 cells), curved,62.5×6 μ ....Fig16. ***Calonectria quinqueseptata***

multi-cells, lunate-shape,60×5 μ .... Fig17. ***Haligena viscidula***

multi-cells(10 cells), both ends sharp,54×6 μ .... Fig18. ***Fusarium*** sp.

multi-cells(9 cells), both ends sharp,53×4 μ .... Fig19. ***Haligena viscidula***

multi-cells, with a setula at each end,50×8 μ ....Fig20. ***Bombardia fasciculata***

multi-cells, both ends sharp,50×4 μ .... Fig21. ***Fusarium*** sp.

multi-cells(6 cells), both ends sharp,50×4 μ .... Fig22. ***Haligena viscidula***

multi-cells, both ends sharp,48×5 μ .... Fig23. ***Astrotheca nigrocornis***

multi-cells, filamentous,45×2 μ .... Fig24. ***Septoria chrysanthemella***

multi-cells(6 cells), both ends sharp,40×5 μ .... Fig25. ***Fusarium*** sp.

multi-cells, curved shape,37×2 μ .... Fig26. ***Septoria chrysanthemella***

multi-cells, sickle shape,36×4 μ .... Fig27. ***Fusarium*** sp.

multi-cells(8 cells),35×5 μ .... Fig28. ***Fusarium*** sp.

multi-cells, both ends sharp,35×5 μ .... Fig29. ***Fusarium*** sp.

multi-cells, filamentous,34×2 μ .... Fig30. ***Pseudocercospora jasminicola***

multi-cells(7 cells),30×7.5 μ .... Fig31. ***Fusarium*** sp.

multi-cells, sickle shape,30×3 μ .... Fig32. ***Fusarium*** sp.

multi-cells, both ends sharp,28×5 μ .... Fig33. ***Fusarium*** sp.

multi-cells(6 cells), lunate shape,28×4~5 μ .... Fig34. ***Fusarium*** sp.

multi-cells(8 cells), both ends sharp,28×3 μ .... Fig35. ***Dicephalospora rufocornea***

multi-cells, septa not obviously,28×2 μ .... Fig36. ***Septoria adanensis***

multi-cells, both ends sharp,27.5×4 μ .... Fig37. ***Fusarium*** sp.

multi-cells, both ends sharp, restriction at each septum,

26×4 μ .... Fig38. ***Fusarium*** sp.

multi-cells, one end sharp, the other end blunt,25×6 μ .... Fig39. ***Fusarium*** sp.

multi-cells(8 cells), both ends sharp,25×5 μ .... Fig40. ***Fusarium*** sp.

multi-cells(6 cells), both ends sharp,25×4 μ .... Fig41. ***Fusarium*** sp.

multi-cells, one end slender, light brown;25×3 μ .... Fig245. ***Fusarium*** sp.

multi-cells, light brown,24×3 μ .... Fig248. ***Fusarium*** sp.

multi-cells(6 cells),18×3 μ .... Fig42. ***Fusarium*** sp.

5 cells,13×3 μ .... Fig43. ***Fusarium*** sp.

5 cells, both ends sharp,12×2 μ .... Fig44. ***Fusarium*** sp.

4 to 5 cells, both ends sharp,30×2.5 μ .... Fig45. ***Fusarium*** sp.

4 cells, truncate at the base, with a beak,48×9~10 μ ....Fig46.

Pyriculariopsis sp. **or** ***Camptomeris albiziae***

4 cells, both ends sharp,25×5 μ .... Fig47. ***Fusarium*** sp.

4 cells, truncate at the base,25×2~3 μ .... Fig48. ***Septoria apiicola***

4 cells, both ends truncate,25×3 μ ....Fig49. ***Cercospora*** sp.

4 cells, both ends blunt,24×5 μ .... Fig50. ***Fusarium chlamydosporum***

4 cells, both ends sharp,23×4 μ .... Fig51. ***Fusarium*** sp.

4 cells, both ends blunt,21×5 μ .... Fig52. ***Fusarium*** sp.

4 cells, macrocephalic,20×5 μ ....Fig53. ***Magnaporthe grisea***

4 cells, both ends blunt,20×5 μ .... Fig54. ***Fusarium*** sp.

4 cells, both ends sharp,20×4 μ .... Fig55. ***Fusarium*** sp.

4 cells, both ends sharp,20×4 μ .... Fig56. ***Fusarium*** sp.

4 cells, both ends sharp, microcephalic,16×4 μ ....Fig57. ***Chaetosphaeria fusispora***

4 cells, truncate at the base, the other end blunt,15×3 μ .... Fig58. ***Fusarium*** sp.

4 cells,14×3 μ .... .Fig59. ***Leptosphaeria graminum***

3 cells, one end wide,18×4 μ .... Fig60. ***Fusarium*** sp.

3 cells, both ends sharp,16×4 μ .... Fig61. ***Fusarium*** sp.

3 cells, central cell wide,13×3 μ .... Fig62. ***Fusarium*** sp.

2 cells,58×5 μ .... Fig63. ***Diatractium cordianum***

2 cells, one cell curved,54×5 μ ....Fig64. ***Diachora erebia***

2 cells,48×4 μ .... Fig65. ***Corniculariella spina***

2 cells, truncate at both ends, bacilliform,46×11 μ ....Fig66.

Geotrichum sp. or ***Monilia*** sp.

2 cells, curved , with thick wall,35×7.5 μ .... Fig67. ***Tryblidopsis pinastri***

2 cells, both ends blunt,fusiform,35×7 μ ....Fig68. ***Bertia moriformis***

2 cells,32×8 μ .... Fig69. ***Fusarium*** sp.

2 cells, truncate at the base,27~30×2~3 μ .... Fig70. ***Cladosporiella cercosporicola***

2 cells, both ends sharp,25×5 μ .... Fig71. ***Leotia lubrica***

2 cells, both ends sharp,25×5 μ .... Fig72. ***Leotia lubrica***

2 cells,18×4 μ .... Fig73. ***Fusarium*** sp.

2 cells, both ends sharp,10×2 μ ....Fig74. ***Fusarium solani***

unicellular, both ends with hyaline stylet appendage,

70×4 μ .... Fig75. ***Cercophora mirabilis***

unicellular, fusiform,52×10 μ .... Fig76. ***Cookeina insititia***

unicellular, fusiform , both ends sharp, 28×4 μ ....Fig77. ***Dicephalospora rufocornea***

unicellular, fusiform , both ends blunt,12×3 μ ....Fig78. ***Fusarium solani***

II. Subspherical(ellipsoidal) shape spore etc.,

(the ratio of spore length/width<4)

multi-cells, with longitudinal and transversal septa, macrocephalic,

32×10~11 μ ....Fig79. ***Hysterographium*** sp.

multi-cells, with longitudinal and transversal septa, thick wall,

31×13 μ ....Fig80. ***Leptosphaerulina trifolii***

multi-cells(6 cells), both ends sharp,30×8 μ .... Fig81. ***Fusarium*** sp.

multi-cells, one end sharp, the other end blunt,

27×8 μ ....Fig82. ***Leptosphaeria luctuosa***

multi-cells(6 cells), both ends blunt,18×8 μ .... Fig83. ***Dacrymyces palmatus***

multi-cells(5 cells), one end sharp, the other end blunt,

18×6 μ .... Fig84. ***Dacrymyces palmatus***

4 cells, both ends blunt,30×16 μ .... Fig85. ***Drechslera specifera***

4 cells, microcephalic, 30×10 μ ....Fig86. ***Schizosaccharomyces octosporus***

4 cells, both ends blunt,30×10 μ .... Fig87. ***Calonectria rigidiuscula***

4 cells, both ends blunt,26×9 μ .... Fig88. ***Fusarium*** sp.

4 cells, with thick wall,25×8 μ .... Fig89. ***Calonectria rigidiuscula***

4 cells, both ends sharp,20×6 μ .... Fig90. ***Fusarium*** sp.

4 cells, both ends blunt,18×5 μ ....Fig91. ***Leotia lubrica***

4 cells, both ends sharp,18×5 μ ....Fig92. ***Leotia lubrica***

3 cells, with thick wall,22×9 μ ....Fig93. ***Pyricularia oryzae***

2 cells, microcephalic,25×9 μ .... Fig94. ***Sydowiella fenestrans***

2 cells, one end round,other truncate, 20×13 μ ....Fig95. ***Monilia*** sp.

2 cells, one end sharp, truncate at the base,18×5 μ ....Fig96. ***Pyricularia oryzae***

2 cells,18×5 μ .... Fig97. ***Gibberella fujikuroi***

2 cells, both ends sharp,18×5 μ .... Fig98. ***Fusarium chlamydosporum***

2 cells, 18×5 μ ....Fig99. ***Mycosphaerella marksii***

2 cells, with thick wall,16×5 μ ....Fig100. ***Nectria galligena***

2 cells, subspherical shape,10~16×3~4 μ .... Fig101. ***Fusarium chlamydosporum***

2 cells, macrocephalic,13×5 μ .... Fig102. ***Saccharomycodes ludwigii***

2 cells,12.5×5 μ .... Fig103. ***Gibberella fujikuroi***

2 cells,12×4 μ .... Fig104. ***Fusarium chlamydosporum***

2 cells, macrocephalic,12×6 μ .... Fig105. ***Mycosphaerella suberosa***

2 cells,10×5 μ ....Fig106. ***Fusarium babinda***

2 cells,8×4 μ ....Fig107. ***Fusarium babinda***

2 cells,8×3 μ .... Fig108. ***Fusarium chlamydosporum***

unicellular, oblong,36×10 μ .... Fig109. ***Oidium*** sp.

unicellular,34×16 μ ....Fig110. ***Sphaerotheca*** sp.

unicellular, with thick wall,33×13 μ ....Fig111. ***Galiella javanica***

unicellular, with thick wall,26×14 μ ....Fig112. ***Sphaerotheca*** sp.

unicellular, with thick wall, roughened with granules,

25×18 μ .... Fig113. ***Puccinia arachidis***

unicellular,20×10 μ ....Fig114. ***Sarcoscypha occidentalis***

unicellular,20×10 μ ....Fig115. ***Sarcoscypha occidentalis***

unicellular, oblong shape,20×8 μ .... Fig116. ***Blumeriella haddenii***

unicellular, inequilateral edge,20×6 μ .... Fig117. ***Trabutia quercina***

unicellular,18×13 μ .... Fig118. ***Uromyces dolicholi***

unicellular, ellipsoidal shape,18×6 μ .... Fig119. ***Leotia lubrica***

unicellular, cylindrical shape, oblong,18×5 μ .... Fig120. ***Sarcoscypha occidentalis***

unicellular, spathulate shape,16×13 μ .... Fig121. ***Ceratocystis fimbriata***

unicellular, truncate at the base,16×8 μ .... Fig122. ***Sarcoscypha occidentalis***

unicellular,16×5 μ .... Fig123. ***Coccodiella arundinariae***

unicellular,15×6 μ .... Fig124. ***Heterochaete delicata***

unicellular,14×6 μ .... Fig125. ***Heterochaete delicata***

unicellular,14×4 μ .... Fig126. ***Botryosphaeria*** **sp.**

unicellular, one end sharp, the other blunt,13×10 μ .... Fig127.

Fusarium poae **or** ***Amanita ceciliae***

unicellular, both ends sharp, ellipsoid shape,

13×9 μ .... Fig128. ***Leucocoprinus fragilssimus***

unicellular,10~12×4~5 μ .... Fig129. ***Polystigma rubrum***

unicellular, bulb-like shape,10×7 μ .... Fig130. ***Fusarium poae***

unicellular,10×3 μ .... Fig131. ***Fusarium solani***

unicellular, inequilateral , 10×3 μ .... Fig132. ***Fusarium solani***

unicellular, ovoid shape,9×6 μ .... Fig133. ***Mortierella alpina***

unicellular,8×7 μ .... Fig134. ***Fusarium beomiforme***

unicellular,8×3 μ .... Fig135. ***Fusarium heteronemum***

unicellular, subspherical shape,7~8×4 μ .... Fig136. ***Marasmius oreades***

unicellular,7×4 μ ....Fig137. ***Fusarium babinda***

unicellular, in chain,4~5×3~4 μ ....Fig138. ***Penicillium*** **sp.**

unicellular,5×3 μ ....Fig139. ***Penicillium*** **sp.**

unicellular,5×3 μ .... Fig140. ***Penicillium rolfsii***

unicellular, subspherical shape,4-5×2~3 μ ....Fig141. ***Collybia cookei***

unicellular, in chain,2×0.5~1 μ .... Fig142. ***Acremonium*** **sp.**

III. Globose shape spore

φ 32 μ ....Fig143. ***Cyathus stercoreus***

φ 20~26 μ .... Fig144. ***Puccinia asparagi***

φ 16 μ ....Fig145. ***Amanita ceciliae***

φ 13×12 μ ....Fig146. ***Mortierella hyalina***

φ 10 μ .... Fig147. ***Fusarium*** **sp.**

φ 10 μ .... Fig148. ***Mortierella globulifera***

φ 10 μ , roughened on surface..Fig149.***Russula emetica***

φ 8 μ ....Fig150. ***Scopulariopsis brevicaulis***

φ 4 μ .... Fig151. ***Penicillium viridicatum***

φ 3~4 μ ....Fig152. ***Penicillium*** **sp.**

φ 3 μ ....Fig153. ***Penicillium*** **sp.**

φ 1~2 μ .... Fig154. ***Aspergillus minimus***

IV. Reniform shape spore

unicellular, allantoid,18×5 μ .... Fig155. ***Coccodiella arundinariae***

unicellular,10×5 μ .... Fig156. ***Mortierella elongata***

unicellular,9×4 μ .... Fig157. ***Fusarium dlamini***

unicellular, φ 7×8 μ .... Fig158. ***Ceratocystis fimbriata***

V. Pyriform/Obpyriform/Ovoid/Obovoid shape spore

3 cells, truncate at the base,20×8 μ .... Fig159. ***Pyricularia oryzae***

2 cells, with one slender and curved end,30×6 μ .... Fig160. ***Chaetoconis polygoni***

2 cells, one small, another big,18×7 μ .... Fig161.***Pseudomassaria islandica***

unicellular,10×6 μ .... Fig162. ***Fusarium dlamini***

unicellular,8×5 μ .... Fig163. ***Fusarium dlamini***

VI. Doliiform shape spore

24×24 μ .... Fig164. ***Peronospora digitalids***

16×16 μ .... Fig165. ***Albugo bliti***

二、Spore with pigments(ex. black, brown, light brown, yellow brown, yellow, red, red brown, *et al.*)

I. Long-shape, subspherical-shape, ovoid-shape spores etc.

A. Spore length beyond 40 μm

multi-cells, truncate at the base, with a long beak, brown,

380×16 μ ....Fig166. ***Phaeotrichoconis*** sp.

multi-cells, truncate at both ends, brown, 210×14 μ ....Fig167.

Sporidesmium sp. **or** ***Exserohilum*** sp. **or** ***Setosphaeria*** sp.

multi-cells, truncate at the base, grey,160×6 μ ....Fig168.

Cercospora nicotianae **or** ***Ramulispora*** sp.

multi-cells, both ends sharp, brown,142×20 μ ....Fig169. ***Phaeoisariopsis*** sp.

multi-cells(12 cells), truncate at the base, brown,

125×18 μ ....Fig170. ***Corynesporella*** sp.

multi-cells, truncate at the base, brown,124×16 μ ....Fig171. ***Janetia synnematosa***

multi-cells, truncate at the base, grey-brown,120×12 μ ....Fig172.

Corynespora sp. **or** ***Corynesporella*** sp.

multi-cells, truncate at the base, brown,

110×18 μ .... Fig173. ***Drechslera*** sp. **or** ***Sporidesmium*** sp.

multi-cells(8 cells), truncat at the base, light brown,

96×7 μ ....Fig174. ***Catenosubulispora honiaraensis***

multi-cells, truncate at the base, grey,92×17 μ ....Fig175. ***Phaeoisariopsis*** sp.

multi-cells, microcephalic, dark brown,52-90×7 μ ....Fig176. ***Torula herbarum***

multi-cells, truncate at the base, brown,

82×10 μ ....Fig177. ***Sporidesmium eupatoriicola***

multi-cells, truncate at the base, one end blunt, light brown,

46~82×10~16 μ ....Fig178. ***Drechslera*** sp.

multi-cells, roughened with granules, microcephalic ,brown,

75×8 μ ....Fig179. ***Sirosporium sesseae***

multi-cells(6 cells), truncate at the base, light brown,

60×10 μ .... Fig180. ***Pseudocercospora zambiensis***

multi-cells(6 cells), truncate at the base, brown,

60×8 μ .... Fig181. ***Sporidesmium gelatinosum***

multi-cells, with longitudinal and transversal septa, roughened

with granules, brown,58×20 μ .... Fig182. ***Stemphylium botryosum***

multi-cells, red-brown,56×14 μ ....Fig183. ***Drechslera fugax***

multi-cells, microcephalic, yellow-green,

56×14 μ ....Fig184. ***Chaetosphaeria fusispora***

multi-cells, with transversal septaconstricted, dark brown,

55×15 μ ....Fig185. ***Meliola ngerechiana***

multi-cells(6 cells), both ends sharp, grey-brown,

54×5 μ .... Fig186. ***Leptosphaeria*** sp.

multi-cells(6 cells), with either transversal or both transveral

and longitudinal septa, with a long beak, brown or light brown,

40~54×11~12 μ ....Fig187. ***Alternaria*** sp.

multi-cells, septa not obvious, brown,52×16 μ ....Fig188. ***Drechslera coicis***

multi-cells(8 cells), flexuous, red-brown,50×8 μ .... Fig189. ***Acarocybella*** sp.

multi-cells(8 cells), both ends hyaline, central brown,

46×10 μ .... Fig190. ***Deightoniella fimbristylidis***

multi-cells(6 cells), truncate at the base, light brown,

45×13 μ .... Fig191. ***Sporidesmium macrurum***

multi-cells, with longitudinal and transversal septa, dark brown,

45×13 μ .... Fig192. ***Deightoniella fimbristylidis***

multi-cells, roughened with granules, with longitudinal and

transversal septa, brown,44×24 μ .... Fig193. ***Stemphylium*** sp.

multi-cells, roughened with granules, with longitudinal and

transversal septa, dark brown,36~44×16 μ .... Fig194. ***Stemphylium*** sp.

multi-cells(7 cells), truncate at the base, light brown,

44×12 μ .... Fig195. ***Murogenella*** sp.

multi-cells(8 cells), truncate at the base, grey-brown,

43×9 μ .... Fig196. ***Sporidesmium*** sp.

multi-cells(7 cells), truncate at the base, brown,

42×6 μ .... Fig197. ***Pseudocercospora combretacearum* var. *minima***

multi-cells(5 cells), truncate at the base, brown,41×9 μ .... Fig198. ***Bactridium*** sp.

multi-cells, with longitudinal and transversal septa, with one beak,

40×15 μ .... Fig199. ***Dictyodesmium prunorum***

multi-cells(5 cells), brown,40×7 μ .... Fig200. ***Alternaria dennisii***

4 cells, central one cell swollen, brown,48×20 μ .... Fig201. ***Curvularia*** sp.

4 cells, truncate at the base, brown ,44×13 μ .... Fig202. ***Spiropes*** sp.

4 cells, light brown,44×12 μ .... Fig203. ***Drechslera ravenelii***

4 cells, grey,40×14 μ ....Fig204. ***Drechslera ravenelii***

3 cells, grey-brown,30~44×10~12 μ ....Fig205. ***Drechslera ravenelii***

2 cells, truncate at the base, yellow-brown,78×15 μ ....Fig206. ***Corynespora smithii***

2 cells, truncate at the base, grey-brown,48×10 μ ....Fig207. ***Drechslera phlei***

2 cells, truncate at the base, brown,26~44×12 μ ....Fig208. ***Stemphylium*** sp.

B. Spore length between 30 μm and 40 μm

multi-cells(6 cells), truncate at the base, grey, 30~40×5 μ ....Fig209.

Exosporium catenulatum* or *Exosporium occidentale

multi-cells, with longitudinal and transversal septa,

yellow-brown,36×18 μ .... Fig210. ***Pleospora*** **sp.**

multi-cells(7 cells), roughened with granules, microcephalic,

brown,36×10 μ .... Fig211. ***Rhopographus filicinus***

multi-cells, with longitudinal and transversal septa,

yellow-brown,35×13 μ .... Fig212. ***Pleospora*** **sp.**

multi-cells, truncate at both ends, dark brown,

35×10 μ .... Fig213. ***Deightoniella fimbristylidis***

multi-cells, both ends with hyaline sheath, macrocephalic,

light brown,35×5 μ ....Fig214. ***Tomasellia dispersa***

multi-cells(6 cells), light brown,35×5 μ ....Fig215. ***Leptosphaeria dolioloides***

multi-cells(6 cells), light brown,35×5 μ ....Fig216. ***Leptosphaeria dolioloides***

multi-cells(6 cells), truncate at the base, light brown,

35×5 μ ....Fig217. ***Pseudocercospora combretacearum* var. *minima***

multi-cells, dark brown,34×7 μ ....Fig218. ***Torula herbarum***

multi-cells(5 cells), truncate at the base, the other end sharp,

light brown,32×7 μ .... Fig219. ***Pseudospiropes*** **sp.**

multi-cells, truncate at the base, with longitudinal and transversal septa,

roughened with granules, brown,31×16 μ ....Fig220. ***Stemphylium vesicarium***

multi-cells(10 cells), brown,31×8 μ .... Fig221. ***Sirosporium antenniforme***

multi-cells, with longitudinal and transversal septa, brown,

30×14 μ .... Fig222. ***Stemphylium*** sp.

multi-cells, with longitudinal and transversal septa, light brown,

30×7 μ .... Fig223. ***Thyronectria*** sp.

multi-cells(9 cells), light brown,30×5 μ .... Fig224. ***Phaeosphaeria herpotrichoides***

4 cell,38×13 μ .... Fig225. ***Drechslera avenae***

4 cells, curved, light brown,32×10 μ .... Fig226. ***Curvularia*** sp.

4 cells, microcephalic, brown,

32×4 μ .... Fig227. ***Perisporium vulgare* or *Sporormiella minima***

4 cells, microcephalic, brown,31×10 μ .... Fig228. ***Leptosphaeria*** sp.

4 cells, truncate at the base, both ends hyaline, central cells red-brown,

30~27×13~10 μ .... Fig229. ***Curvularia*** sp.

4 cells, curved, light brown,30×9.5 μ .... Fig230. ***Curvularia*** sp.

4 cells, truncate at the base, grey-brown,30×5 μ .... Fig231. ***Cercospora*** sp.

3 cells, truncate at the base, the other end cell swollen, brown,

38×16 μ .... Fig232. ***Cladosporium echinulatum***

3 cells, curved, truncate at the base, brown,

35×13 μ ....Fig233. ***Cladosporium* state of *Mycosphaerella macrospora***

2 cells, macrocephalic, dark brown,32~34×9~13 μ .... Fig234. ***Delitschia palmietensis***

2 cells, roughened with granules, brown,32×14 μ .... Fig235. ***Cladosporium*** sp.

unicellular, ellipsoidal shape, brown,32~36×6 μ .... Fig236. ***Ustulina deusta***

unicellular, truncate at both ends, light brown,32×8 μ ....Fig237. ***Corynespora*** sp.

C. Spore length between 20 μm and 30 μm

multi-cells(6 cells), both ends blunt, grey,

29×5 μ .... Fig238. ***Leptosphaeria ogilviensis***

multi-cells, truncate at the base, with longitudinal and transversal septa, brown,

27.5×13 μ .... Fig239. ***Alternaria alternata***

multi-cells, characteristically lobulate, with lobes, truncate at the base, dark brown,

26×18 μ .... Fig240. ***Spegazzinia deightonii***

multi-cells, microcephalic, with longitudinal and transversal septa, brown,

26×10 μ .... Fig241. ***Alternaria*** sp.

multi-cells, with longitudinal and transversal septa, both ends sharp,

brown,24~26×6~8 μ .... Fig242. ***Thyronectria*** sp.

multi-cells(5 cells), microcephalic, light brown,

25×5 μ .... Fig243. ***Syncephalastrum racemosum***

multi-cells, light brown,25×4 μ .... Fig244. ***Dualomyces bambucicola***

multi-cells(5 cells), truncate at the base, another end slender, light brown,

25×3 μ .... Fig246. ***Pseudocercospora ixorae***

multi-cells(6 cells), light brown,24×8 μ .... Fig247. ***Leptosphaeria luctuosa***

multi-cells, with longitudinal and transversal septa, light brown,

23×13 μ .... Fig249. ***Acrodictys fuliginosa***

multi-cells, with longitudinal and transversal septa, one end sharp, another

end blunt, light brown,23×10 μ .... Fig250. ***Thyronectria pseudotrichia***

multi-cells, with longitudinal and transversal septa, coated with a thin

layer membrane, dark brown,22×8 μ .... Fig251. ***Pleospora*** sp.

multi-cells, with longitudinal and transversal septa, brown,

20×10 μ .... Fig252. ***Thyronectria pseudotrichia***

multi-cells(6 cells), microcephalic, brown,20×8 μ ...... Fig253. ***Dermatodothis symploci***

multi-cells, with longitudinal and transversal septa,brown,

20×7.5 μ .... Fig254. ***Gloniopsis curvata***

multi-cells, with longitudinal and transversal septa, yellow-brown,

16~20×6 μ .... Fig255. ***Pleospora*** sp.

multi-cells(5 cells), microcephalic, dark brown,15×7 μ .... Fig256. ***Torula*** sp.

4 cells, truncate at the base, another end blunt, central cell swollen,

light brown,28×12 μ ....Fig257. ***Curvularia*** sp.

4 cells, central cells swollen, yellow-green,27×16 μ ....Fig258. ***Curvularia*** sp.

4 cells, truncate at the base, the other end blunt, brown,

26×9 μ ....Fig259. ***Spadicoides xylogena***

4 cells, truncate at the base, another end sharp, brown,

26×9 μ ....Fig260. ***Pyricularia*** sp.

4 cells, truncate at the base, brown,25×7.5 μ ....Fig261. ***Sporidesmium macrurum***

4 cells, truncate at the base, red-brown,25×6 μ ....Fig262. ***Sonderhenia eucalyptorum***

4 cells, both ends sharp, central cells swollen, light brown,

24×12 μ .... Fig263. ***Thyrostromella myriana***

4 cells, curved, truncate at the base, brown,24×8 μ ....Fig264. ***Curvularia*** sp.

4 cells, sigmoid, 2 central cells dark,23×10 μ .... Fig265. ***Curvularia deightonii***

4 cells, both ends blunt, roughened with granules, red-brown,

23×7 μ .... Fig266. ***Dendryphiella comosum***

3 to 4 cells, light brown,26×8 μ .... Fig267. ***Dendryphiella vinosa***

3 cells, truncate at the base, brown,

22×12 μ ....Fig268. ***Cladosporium* state of *Mycosphaerella dianthi***

3 cells, truncate at the base, brown,20×8 μ ....Fig269. ***Asperisporium*** sp.

3 cells, truncate at both ends, microcephalic, grey-brown,

20×8 μ .... Fig270. ***Torula herbarum f. quaternella***

3 cells, grey-brown,20×5 μ .... Fig271. ***Leptosphaeria michotii***

2~4 cells, in chain, truncate at the base, grey-brown,

14~22×4 μ .... Fig272. ***Cladosporium spongiosum***

2 cells, brown,20×9 μ .... Fig273. ***Acantharia chaetomoides***

2 cells, both ends sharp, grey-brown,30×6 μ ....Fig274. ***Didymosphaeria pustulata***

2 cells, both ends sharp, light brown,28×6 μ ....Fig275. ***Didymosphaeria pustulata***

2 cells, light brown,28×5 μ ....Fig276. ***Didymosphaeria pustulata***

2 cells both ends sharp, light-yellow,28×4 μ .Fig277. ***Herpotrichia schiedermayeriana***

2 cells, dark brown,26×14 μ .... Fig278. ***Botryodiplodia*** sp.

2 cells, one cell swollen, dark grey,26×13 μ ....Fig279. ***Coleroa*** sp.

2 cells, brown,26×13 μ .... Fig280. ***Botryodiplodia*** sp.

2 cells, one cell swollen, a thin gelatinous coat, brown,

26×12 μ ....Fig281. ***Prillieuxina*** sp.

2 cells, constricted at septum, dark brown,26×12 μ .... Fig282. ***Acantharia aterrima***

2 cells, truncate at the base, light brown,26×10 μ .... Fig283. ***Pyricularia*** sp.

2 cells, both ends blunt, grey-brown,26×7 μ ....Fig284. ***Herpotrichia erythrinae***

2 cells, constricted at septum, grey,25×13 μ .... Fig285. ***Acantharia aterrima***

2 cells, light brown,25×5 μ ....Fig286. ***Lophiostoma inaequalis***

2 cells, with longitudinal band, brown,22×8 μ ....Fig287. ***Nectria*** sp.

2 cells, dark brown, with longitudinal band,20×8 μ ....Fig288. ***Nectria haematococca***

2 cells, light brown,20×5 μ .... Fig289. ***Lophiostoma*** sp.

2 cells, both ends sharp, constricted at septum, red-brown,

16~20×4 μ ....Fig290. ***Lophiostoma fuckelii* var. *pulveracea***

unicellular, roughened with granules, light brown,2

8×20 μ .... Fig291. ***Puccinia arachidis***

unicellular, subspherical, dark brown,25×18 μ ....Fig292. ***Thielavia setosa***

unicellular, allantoid shape, both ends sharp, dark brown,

25×7 μ ....Fig293. ***Xylaria tabacina***

unicellular, oval shape, roughened with granules, yellow,

24×20 μ .... Fig294. ***Puccinia sorghi***

unicellular, oval shape, truncate at the base, yellow brown,

22×16 μ ....Fig295. ***Peronospora chlorae***

unicellular, with a longitudinal band, dark brown,

20×16 μ .... Fig296. ***Spegazzinia tessarthra***

unicellular, truncate at the base, light brown,

20×13 μ ....Fig297. ***Chlorophyllum molybdites***

unicellular, ellipsoid shape, grey-brown,

20×10 μ ....Fig298. ***Choanephora cucurbitarum***

D. Spore length between 10 μm and 20 μm

multi-cells(8cells), grey-brown,18×14 μ ....Fig299. ***Cerebella*** sp.

multi-cells, with longitudinal and transversal septa, brown,

18×9.5 μ ....Fig 300. ***Ulocladium chlamydosporum***

multi-cells, roughened with granules, brown,16×12 μ .... Fig301. ***Cosmarium*** sp.

multi-cells, with longitudinal and transversal septa, dark brown,

16×10 μ ....Fig302. ***Ulocladium botrytis***

multi-cells(5-7 cells), with longitudinal and transversal septa, dark brown,

16×8 μ ....Fig303. ***Ulocladium chlamydosporum***

multi-cells, with longitudinal and transversal septa, yellow-brown,

15×7.5 μ .... Fig304. ***Gloniopsis*** sp.

multi-cells, with longitudinal and transversal septa, yellow-brown,

15×7.5 μ .... Fig305. ***Berlesiella nigerrima***

multi-cells, with longitudinal and transversal septa , light brown,

15×7 μ .... Fig306. ***Elsinoe phaseoli***

multi-cells, truncate at the base, with longitudinal and transversal septa,

brown,13×5 μ ....Fig307. ***Ulocladium chlamydosporum***

multi-cells, with longitudinal and transversal septa, light brown,

10×7 μ ....Fig308. ***Alternaria*** sp.

4 cells, microcephalic, light brown,20×4 μ ....Fig309. ***Leptosphaeria eustomoides***

4 cells, curved, truncate at the base, brown,18×9 μ ..Fig310. ***Cochliobolus geniculatus***

4 cells, microcephalic, dark brown,18×6 μ ....Fig311. ***Torula herbarum***

4 cells, with obvious transversal septa, grey,

18×5 μ .... Fig312. ***Litschaueria corticiorum***

4 cells, both ends hyaline, central light brown,18×5 μ .... Fig313. ***Savoryella*** sp.

4 cells, truncate at the base, brown,14~16×4 μ ..... Fig314. ***Cacumisporium capitulatum***

4 cells, truncate at the base, brown,14×8 μ .... Fig315. ***Brachysporiella gayana***

4 cells, one end blunt,13×4 μ .... Fig316. ***Cacumisporium capitulatum***

4 cells, microcephalic, light brown,12×4 μ ..Fig317. ***Torula herbarum f. quaternella***

4 cells, with longitudinal and transversal septa, grey-green,

10×4 μ .... Fig318. ***Thyridium vestitum***

2-4 cells, microcephalic, dark brown,14×6 μ .... Fig319. ***Torula*** sp.

3 cells, microcephalic, brown,18×8 μ .... Fig320. ***Trichocladium*** sp.

3 cells, truncate at the base, red-brown,18×5 μ .... Fig321. ***Gonatophragmium mori***

3 cells, truncate at the base, red- brown,

18×5 μ .... Fig322. ***Gonatophragmium mori***

3 cells, microcephalic, light brown,18×4 μ .... Fig323. ***Pyricularia oryzae***

3 cells, the central cell swollen, microcephalic, dark brown,

16×10 μ .... Fig324. ***Pithomyces*** sp.

3 cells, grey,16×6 μ .... Fig325. ***Leptosphaeria*** sp.

3 cells, cylindrical shape, both ends blunt, brown,

16×4 μ .... Fig326. ***Leptosphaeria michotii***

3 cells, brown,14~15×8 μ .... Fig327. ***Pestalotiopsis*** sp.

3 cells, truncate at the base, red-brown,15×5 μ .... Fig328. ***Gonatophragmium mori***

3 cells, microcephalic, brown,14×8 μ .... Fig329. ***Torula herbarum***

3 cells, $13\times5\ \mu$ .... Fig330. ***Pestalosphaeria hansenii***

3 cells, light brown, $12\times7\ \mu$ .... Fig331. ***Pestalosphaeria hansenii***

3 cells, microcephalic, brown, $12\times5\ \mu$ .... Fig332. ***Torula*** sp.

2 cells, constricted at septum, dark brown,

$16\times8\ \mu$ .... Fig333. ***Dendryphiella uniseptata***

2 cells, one cell swollen, truncate at the base, brown,

$14\sim16\times8\ \mu$ .... Fig334. ***Pithomyces*** sp.

2 cells, ovoid shape, grey, $14\times8\ \mu$ .... Fig335. ***Spilocaea pomi***

2 cells, grey-brown, $14\times6\ \mu$ .... Fig336. ***Seynesiella juniperi***

2 cells, constricted at septum, grey, $13\times5\ \mu$ .... Fig337. ***Venturia rumicis***

2 cells, one end hyaline, the other brown,

$13\times5\ \mu$ .... Fig338. ***Rhabdocline pseudotsugae spp. pseudotsugae***

2 cells, brown, $12\times8\ \mu$ .... Fig339. ***Acrodictys*** sp.

2 cells, pale-yellow, $12\times7\ \mu$ .... Fig340. ***Venturia rumicis***

2 cells, truncate at the base, dark brown, $12\times7\ \mu$ .... Fig341. ***Cordana musae***

2 cells, brown, $12\times5\ \mu$ .... Fig342. ***Didymosphaeria arachidicola***

2 cells, in chain, brown, $12\times4\ \mu$ .... Fig343. ***Bispora*** sp.

2 cells, dark brown, $10\times8\ \mu$ .... Fig344. ***Torula herbarum***

2 cells, truncate at the base, pale-yellow, $10\times6\ \mu$ .... Fig345. ***Cordana musae***

2 cells, in chain, dark brown, $10\times4\ \mu$ .... Fig346. ***Didymobotryum rigidum***

2 cells, brown, $8\times4\ \mu$ .... Fig347. ***Albomyces*** sp.

unicellular, ellipsoid shape, dark brown,

$18\sim20\times10\ \mu$ .... Fig348. ***Sphaeropsis cycadis***

unicellular, dark brown,18×10 μ .... Fig349. ***Persiciospora moreau***

unicellular, oval shape, red brown,16×12 μ .... Fig350. ***Nigrospora*** sp.

unicellular, with longitudinal bands, dark brown,

15×9 μ .... Fig351. ***Endocalyx melanoxanthus***

unicellular, with a transversal hyaline band, red-brown,

15×4 μ .... Fig352. ***Beltraniella humicola***

unicellular, with a slit, dark brown,14×12 μ .... Fig353. ***Arthrinium luzulae***

unicellular, ellipsoid shape, roughened with granules, thick wall,

yellow-brown,14×9 μ .... Fig354. ***Inocybe cervicolor***

unicellular, with one stipe, brown,14×8 μ .... Fig355. ***Podospora curvuloides***

unicellular, one end blunt, grey-brown,

11~14×5~6 μ .... Fig356. ***Phaeocytostroma sacchari***

unicellular, grey-brown,13×9.7 μ .... Fig357. ***Ustilago scorzonerae***

unicellular, red-brown,13×8 μ .... Fig358. ***Chaetomium fusiforme***

unicellular, truncate at the base, dark brown,

13×7 μ .... Fig359. ***Hypoxylon uniapiculatum***

unicellular, truncate at the base, thick wall, golden-yellow,

12×8 μ .... Fig360. ***Allescheriella*** sp.

unicellular, with longitudinal bands, brown,12×6 μ .... Fig361. ***Choanephora*** sp.

unicellular, green brown,12×6 μ .... Fig362. ***Arthrinium phaeospermum***

unicellular, truncate at the base, red-brown,11×6 μ .... Fig363. ***Inocybe bongardii***

unicellular, ellipsoid shape,10×7.5 μ .... Fig364. ***Arthrinium phaeospermum***

unicellular, red-brown,10×7 μ .... Fig365. ***Agrocybe pediales***

unicellular, truncate at the base, red-brown,10×6 μ ....Fig366. ***Inocybe rimosa***

unicellular, red-brown,10×6 μ .... Fig367. ***Collybia terrigena***

unicellular, roughened with granules, red-brown,

10×6 μ ....Fig368. ***Lacrymaria velutina***

unicellular, grey-brown,10×5 μ ....Fig369. ***Hypoxylon vogesiacum*** **var.** ***microspora***

unicellular, red-brown,10×3 μ .... Fig370. ***Hypoxylon truncatum***

unicellular, one end sharp, dark brown,8~10×6~8 μ ....Fig371. ***Chaetomium globosum***

unicellular, golden-yellow,6~10×5~8 μ .... Fig372. ***Crucigenia*** sp.

1 to 4 cells, truncate at the base, grey to grey-brown, seldom beyond 10 μm,

5~16×2~4 μ .... Fig373. ***Cladosporium*** sp.

7~11×4~7 μ .... Fig374. ***Cladosporium*** sp.

E. Spore length below 10 μm

4 cells,4×4 μ .... Fig375. ***Crucigenia quadrata*** **var.** ***quadrata***

2 cells, light grey,7×4 μ .... Fig376. ***Veronaea botryosa***

2 cells, fusiform, grey-brown,7×3 μ .... Fig377. ***Ulocladium*** sp.

unicellular, one end sharp, red-brown,9.3×6 μ ....Fig378. ***Coprinus atramentarius***

unicellular, roughened with granules, with a thick wall, yellow-brown,

9×6 μ ....Fig379. ***Ganoderma applanatum***

unicellular, brown,8×6 μ ....Fig380. ***Chaetomium bostrychodes***

unicellular, yellow-brown,8×4 μ ....Fig381. ***Inocybe dulcamara***

coenobia 4 celled, roughened with granules, brown,

6×5 μ ....Fig382. ***Tetrastrum punctatum***

unicellular, grey, $6\times2.5\ \mu$ .... Fig383. ***Gliocephalotrichum*** sp.

unicellular, brown, $5\times3\ \mu$ .... Fig384. ***Gyrodontium sacchari***

coenobia 4-celled, truncate at both ends, in chain, grey-brown,

$3\times2\ \mu$ .... Fig385. ***Tetrastrum punctatum***

II. Globose spore, subglobose sopre

φ 60 μ, thick wall, grey-brown .... Fig386. ***Pythium splendes***

φ 38~45 μ, unicellular, thick wall, roughened with tube-like structure,

yellow-brown .... Fig387. ***Genea*** sp.

φ 26~29 μ, thick wall, yellow .... Fig388. ***Peronospora chlorae***

φ 26 μ, yellow-brown .... Fig389. ***Peronospora chlorae***

φ 26 μ, roughened with granules, dark brown .... Fig390. ***Dictyoarthrinium rabaulense***

φ 24 μ, dark brown thick wall .... Fig391. ***Puccinia cynodontis***

φ 24 μ, brown , surface spiny .... Fig392. ***Tuber texense***

φ 20-24 μ, dark brown thick wall .... Fig393. ***Uromyces pisi-sativi***

φ 22 μ, light red-brown .... Fig394. ***Peronospora rumicis***

φ 18 μ, dark brown .... Fig395. ***Periconia circinata***

φ 16 μ, multi-cells, microcephalic, dark brown .... Fig396. ***Eurotium repens***

φ 15 μ, roughened with granules, brown................Fig397.

Chalara* state of *Ceratocystis adiposa

φ 15 μ, with hyaline thick wall, grey .... Fig398. ***Rhinotrichela globulifera***

φ 13 μ, roughened with granules, red-brown.................. Fig399.

Chalara* state of *Ceratocystis adiposa

φ 12 μ, brown .... Fig400. ***Ustilago burkilli***

φ 10~12 μ, grey-brown .... Fig401. ***Ustilago burkilli***

φ 10 μ, brown .... Fig402. ***Ustilago striiformis***

φ 10 μ, light brown .... Fig403. ***Acremoniella velata***

φ 8~9 μ, thick wall, dark brown .... Fig404. ***Arthrinium phaeospermum***

φ 8 μ, dark brown .... Fig405. ***Arthrinium*** **sp. or** ***Humicola*** **sp.**

φ 8 μ, roughened with granules, light brown .... Fig406. ***Periconia digitata***

φ 8 μ, roughened with granules, dark brown.....Fig407.

Periconia **state of** ***Didymosphaeria igniaria***

φ 6~8 μ, grey .... Fig408. ***Soropediastrum rotundatum***

φ 6~8 μ, roughened with granules, grey .... Fig409. ***Periconia digitata***

φ 5~8 μ, black .... Fig410. ***Strobilomyces strobilaceus***

φ 4.5~6 μ, with brown thick wall .... Fig411. ***Aspergillus*** **sp.**

φ 5 μ, roughened with granules, red-brown .... Fig412. ***Aspergillus tamarii***

φ 3 μ, roughened with granules, yellow-brown .... Fig413. ***Aspergillus flavus***

III. Verruculose spore(subspherical or irregular)

φ 12~20 μ, yellow-brown .... Fig414. ***Botryococcus calcareus***

IV. Reniform or inequilateral spore

unicellular, truncate at the base, dark brown,

30×12 μ .... Fig415. ***Podospora austro-americana***

unicellular, roughened with granules, brown,

18×8 μ .... Fig416. ***Zygosporium geminatum***

unicellular, roughened with granules, brown,

16×8 μ .... Fig417. ***Zygosporium geminatum***

unicellular, dark brown, 13×6 μ .... Fig418. ***Daldinia*** sp.

unicellular, brown, 12×10 μ .... Fig419. ***Bulgaria*** sp.

unicellular, dark brown, 12×7 μ .... Fig420. ***Daldinia concentrica***

unicellular, red-brown, 8~12×4~6 μ .... Fig421. ***Stachybotrys oenanthes***

unicellular, dark brown, 10×5 μ .... Fig422. ***Stachybotrytis nephrospora***

V. Pyriform or obpyriform spore

4 cells, with one beak, brown, 21~28×9~12 μ .... Fig423. ***Cephaliophora tropica***

2 cells, light brown, 26×10 μ .... Fig424. ***Cephaliophora*** sp.

VI. Semispherical shape spore

unicellular, roughened with granules, brown, 10×8 μ .... Fig425. ***Torula herbarum***

Ⅶ.Bacilliform or doliiform shape spore

unicellular, grey-brown,26×8 μ .... Fig426. ***Rhizoctonia*** **sp.**

Ⅷ.Biconic shape spore

unicellular, one end with long stylet appendage,

30×10 μ .... Fig427. ***Beltrania rhombica***

unicellular, one end with hyaline stylet appendage, yellow-brown,

20×12 μ .... Fig428. ***Beltrania*** **sp.**

unicellular, one end with stylet appendage,20×10 μ .... Fig429. ***Beltrania querna***

unicellular, one end with hyaline stylet appendage, brown,

14×10 μ .... Fig430. ***Beltrania rhombica***

unicellular, light brown,10~12×4-5 μ .... Fig431. ***Vanderystiella leopoldvilleana***

Ⅸ.Others

A. multi-cells, in chains 2 to 3 central cells swollen, dark brown,

62~64×14 μ .... Fig432. ***Dwayabeeja*** **sp.**

multi-cells, in chains, brown, 60×10 μ .... Fig433. ***Dwayabeeja sundara***

B. multi-cells, tetrad or binary, with 2 or 4 legs, dark brown

a. 100×20 μ, leg length,70~72 μ .... Fig434. ***Tetraploa aristata***

b. 68×16 μ, leg length,42 μ .... Fig435. ***Tetraploa aristata***

c. 52×20 μ, leg length,12 μ .... Fig436. ***Tetraploa ellisii***

d. 32×18 μ, leg length,6 μ .... Fig437. ***Tetraploa aristatai***

e. with only 2 legs,74×18 μ, leg length,44 μ ....Fig438. ***Tetraploa aristata***

f. with only 2 legs,15×13 μ, leg length,75 μ ....Fig439. ***Tetraploa aristata***

C. multi-cells, with longitudinal and transversal septa, brown,

54×16 μ ....Fig440. ***Tretospeira ugandensis***

30×10 μ ....Fig441. ***Tretospeira ugandensis***

28×18 μ .... Fig442. ***Stemphylium sarciniforme***

with one stipe, pale-red,22×13 μ ....Fig443. ***Acrodictys globulosa***

D. 4 cells, tetrad spinous, dark brown,30×24 μ ....Fig444. ***Spegazzinia tessarthra***

4 cells, with one stipe, dark brown,

14~16×12~14 μ .... Fig445. ***Spegazzinia lobulata***

4 cells, roughened with fine spine, dark brown,

φ 14 μ .... Fig446. ***Dictyoarthrinium sacchari***

4 cells, with irregular rough suface, dark brown,

φ 10~12 μ .... Fig447. ***Dictyoarthrinium sacchari***

E. unicellular, radial style brown,22×16 μ ....Fig448. ***Micrasterias*** sp.

F. unicellular subglobose, budding reproduction, yellow,

15×11 μ .... Fig449. ***Blastobotrys*** sp.

G. brown, *Zygosporium*,6×4 μ ....Fig450. ***Zygosporium oscheoides***

H. with 2 ends tapered to form horns, curved outwards, red-brown,

30×6 μ ....Fig451. ***Arthrinium*** sp. ***or Annellolacinia dinemasporioides***

貳、孢子圖形及文字說明

Fig. 1 *Raphidiopsis mediterranea* var. *grandis*
The fresh water algae, trichomes straight, solitary,free-floating, smoothly attenuated into a long hair, slightly constricted at the cross walls, cylindrical 260 - 42 5 × 3. 3 - 4. 8μm.

Fig. 2 *Atkinsonella hypoxylon*
Ascospores filiform paralleled in ascus, multiseptate, hyaline.

Fig. 3 *Pseudocercospora rhapidicola*
Conidia straight or mildly curved, narrowly obclavate or filiform hyaline, apex conical to rounded, base truncate, hilum unthickened, 0 - 10-septate, 30 - 160 × 2 - 4μm.

Fig. 4 *Leptospora rubella*
Ascospores lying parallel and spirally arranged in the ascus, 80 - 180 × 0. 5 - 1. 5μm, with numerous transverse septa, almost colorless.

Fig. 5 *Pseudocercospora* sp.
Conidia hyaline, indistinctly multiseptate, truncate at the base, hilum unthickened, 100 × 10μm.

Fig. 6 *Gaeumannomyces graminis*
Ascospores filiform to narrowly clavate, tapering toward the ends, straight or curved, several-septate, hyaline or yellowish.

Fig. 7 *Cercospora ageraticola*
Conidia hyaline, acicular to obclavate, indistinctly multiseptate, straight to mildly curved, acute at the apex, truncate or short obconically truncate at the base with a thickened hilum, 25 - 110 × 3 - 4. 5μm.

Fig. 8, 9 and 11 *Fusarium* sp.
Conidia (phialospores) hyaline, variable, principally of two kinds, often held in small moist heads; macroconidia several-celled, slightly curved or bent at the pointed ends, typically canoe-shaped; microconidia 1-celled, ovoid or oblong, borne singly or in chains; some conidia intermediate, 2- or 3- celled, oblong or slightly curved.

Fig. 10 *Glomerella septospora*
Ascospores cylindrical to narrowly fusiform, fasciculate, hyaline, straight or slightly curved, mostly 3-septate, but 6 to 8- septate while mature, 60 - 95 (100) × 5 - 7. 5μm.

Fig. 12 *Pseudocercospora neriella*
Conidia slightly curved to undulate, obclavate to filiform, hyaline to subhyaline, apex conically rounded, base obconically truncate, 3 - 10-septate, 60 - 78 × 3 - 4 μm.

Fig. 13 *Trichoconis caudata*
Conidia phragmosporous, hyaline, with appendage.

Fig. 14 *Septoria leucanthemi*
Conidia hyaline, straight or slightly curved, basal end broad, subobtuse to blunt, gradually tapering towards a round apex, 72 - 96(116) × 2. 5 - 3(3. 5)μm, 6 - 12(16) septate, with a single nucleus in each cell, and formed as blastospores from clavate to obpyriform, aseptate, hyaline conidiophores 3 -7μm long.

Fig. 15 *Nodulosphaeria* sp.
Ascospores have one cell in the upper half distinctly broader than the others, fusiform, with From two to many cross septa, yellowish to yellowish-brown.

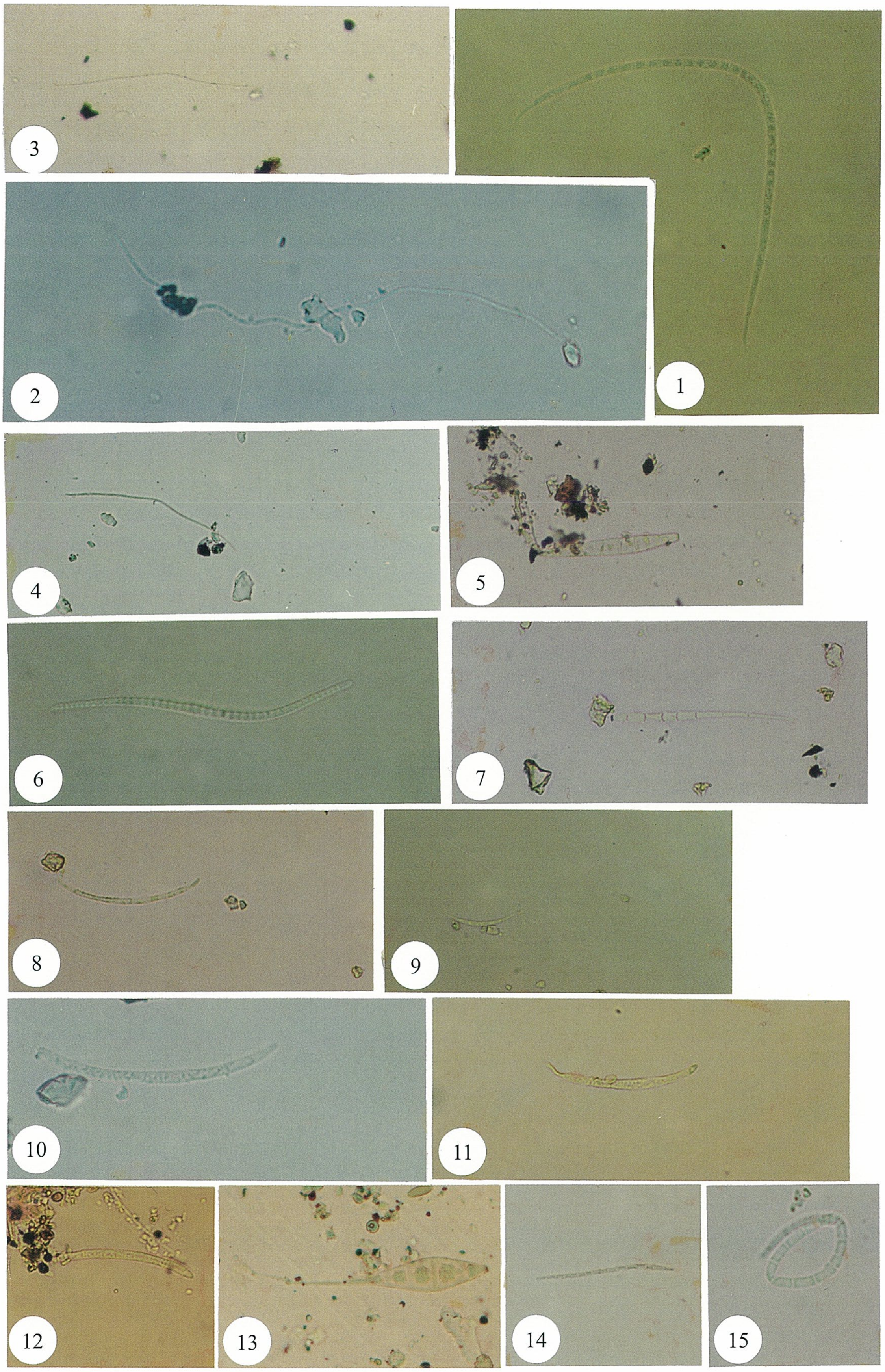
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Fig. 16 *Calonectria quinqueseptata*
Ascospores hyaline, variously curved, 1- 6 septate, mostly 3 septate, 30 - 80 × 4 - 7μm long.

Fig. 17, 19 and 22 *Haligena viscidula*
Ascospores hyaline to yellowish-brown, long-fusiform, 44 - 68 × 3 - 5μm, 6 - 12 septate, with gelatinous sheath at ends.

Fig. 18 and 21 *Fusarium* sp.
Conidia (phialospores) hyaline, variable, principally of two kinds, often held in small moist heads; macroconidia several-celled, slightly curved or bent at the pointed ends, typically canoe-shaped; microconidia 1-celled, ovoid or oblong, borne singly or in chains; some conidia intermediate, 2 - or 3-celled, oblong or slightly curved.

Fig. 20 *Bombardia fasciculata*
Ascospores biseriate, at first cylindrical, curved or undulating, hyaline, about 40 × 4 μm, with a minute pointed appendage at each end.

Fig. 23 *Astrotheca nigroconis*
Ascospores long fusiform, 50 - 56 × 5 - 7μm, slightly curved, ends acute, hyaline and 1 - 3 septa at first, then becoming dark brown and 5-septa, containing 1 - 2 oil drops in each cell.

Fig. 24 and 26 *Septoria chrysanthemella*
Conidia hyaline, filiform, slightly tapering, apex occasionally acute but usually rounded, blunt at the base, 36 - 65(73) × 1. 5 - 2. 5μm, (3)4 - 9(10)septate, with a single nucleus in each cell, and formed as blastospores from cylindrical to subulate, conidiophores 4 - 9μm.

Fig. 25, 27, 28, 29, 31, 32, 33, 34, 37, 38, 39, 40, 41, 42, 43, 44, 45 and 47 *Fusarium* sp.
Conidia (phialospores) hyaline, variable, principally of two kinds, often held in small moist heads; macroconidia several-celled, slightly curved or bent at the pointed ends, typically canoe-shaped; microconidia 1-celled, ovoid or oblong, borne singly or in chains; some condia intermediate, 2- or 3-celled, oblong or slightly curved.

Fig. 30 *Pseudocercospora jasminicola*
Conidia straight, obclavate to filiform, subhyaline, apex conical, base obconically, truncate, 1 - 9 septate, sometimes slightly constricted at the septa, 34 - 58 × 1 - 2μm.

Fig. 35 *Dicephalospora rufocornea*
Ascospores long fusiform, 34 - 51. 5 × 3 - 6μm, smooth, hyaline, containing numerous oil globules, ends obtuse and surrounded by gelatinous sheath.

Fig. 36 *Septoria adanensis*
Conidia hyaline, straight or curved, slightly rounded, at the apex usually blunt at the base, 26 - 36(42) × 1. 5 - 2μm, with 2 - 4 septa and formed as blastospores from hyaline conidiophores 3 - 6μm long.

Fig. 46 *Pyriculariopsis* sp.
Conidia solitary at ends of denticles, dry, acropleurogenous, simple, straight or curved obclavate, rostrate, smooth, mostly 3-septate, cell at each end hyaline or subhyaline, intermediate cell rather pale brown.
Camptomeris albiziae
Conidia 30 - 70 × 8 - 12(47 × 10)μm.

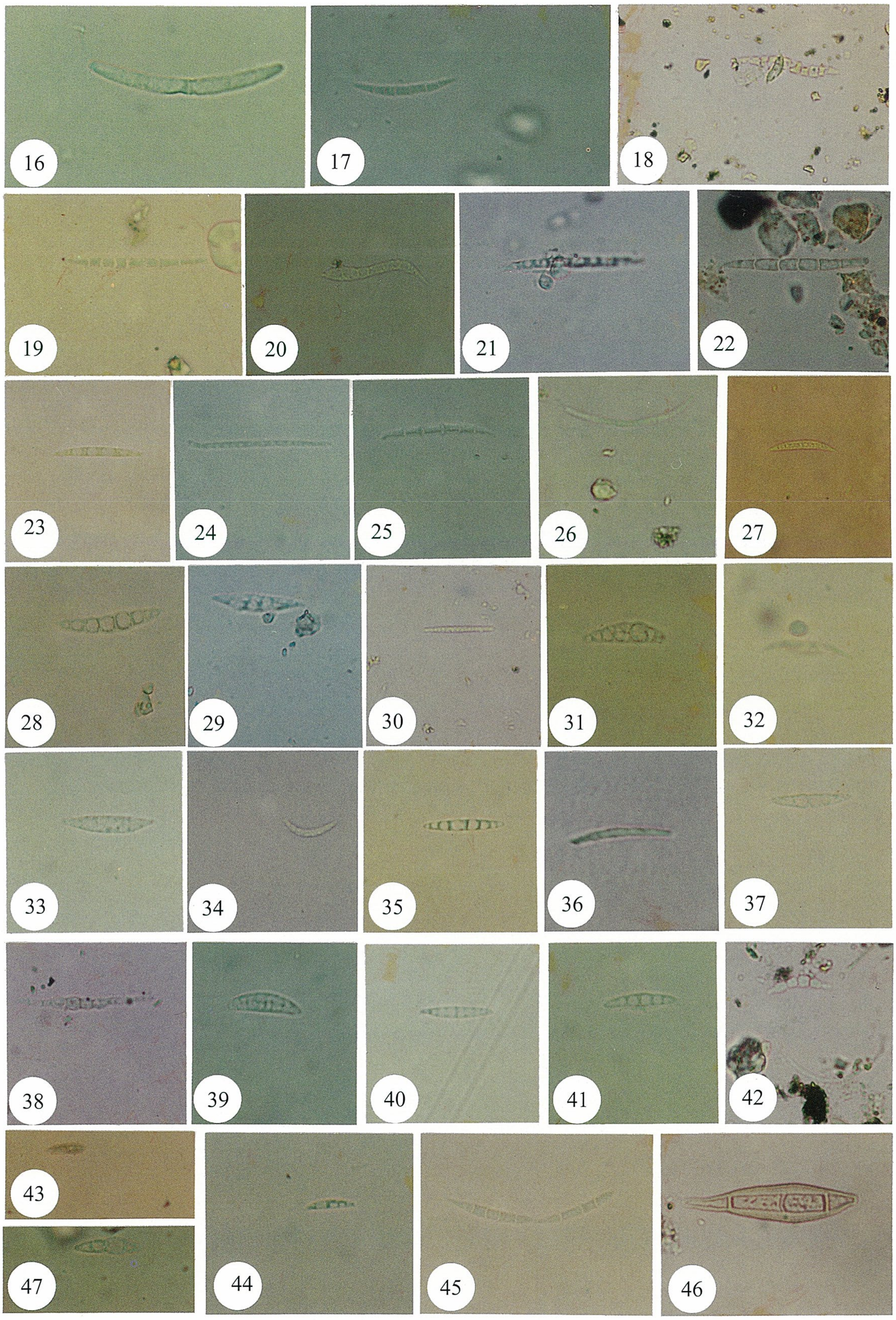
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Fig. 48 *Septoria apiicola*
Conidia hyaline, filiform, 1 - 5 septate(mean 3), apex slightly tapered, subacute, base obtuse, 22 – 56(mean 35μm) × 2 - 2. 5μm, formed as phialospores from hyaline, aseptate cylindrical to clavate conidiophores, 8 - 10 × 3 - 3. 5μm.

Fig. 49 *Cercospora* sp.
Conidia hyaline or gray, long cylindrical to filiform, several-celled.

Fig. 50 *Fusarium chlamydosporum*
Microconidia fusiform, rounded apically and tapered towards the base, 0 - 1(-3)-septate, 16 - 26× 2 - 4μm.

Fig. 51, 52, 54, 55, 56, 58, 60, 61 and 62 *Fusarium* sp.
Conidia (phialospores) hyaline, variable, principally of two kinds, often held in small moist heads; macroconidia several-celled, slightly curved or bent at the pointed ends, typically canoe-shaped; microconidia 1-celled, ovoid or oblong, borne singly or in chains; some conidia intermediate, 2- or 3-celled, oblong or slightly curved.

Fig. 53 *Magnaporthe grisea*
Ascospores phragmosporous (3-septate), fusiform, curved, hyaline, 20 × 6. 1μm, but sometimes with the middle cells turning yellow to yellowish-brown with age, smooth, usually containing oil globules.

Fig. 57 *Chaetosphaeria fusispora*
Ascospores long elliptical or fusoid, ends obtuse, 1 - 3 transverse septate, hyaline at first then becoming pale yellowish-brown to brown.

Fig. 59 *Leptosphaeria graminum*
Ascospores ellipsoidal-fusiform, both ends are acute, hyaline, 3-septa, septa becoming dark,11. 7 – 2.5μm.

Fig. 63 *Diatractium cordianum*
Ascospores slightly to strongly isthmoid, with fusoid end cells, 2 - 3 septate, hyaline, smooth, 65 × 6. 1μm.

Fig. 64 *Diachora erebia*
Conidia 11. 5 - 16 × 2 - 3μm, narrowly fusiform the ends acute, sometimes slightly curved, hyaline, smooth, aseptate, with an extremely thin cellular appendage to 35μm in length at the apex.

Fig. 65 *Corniculariella spina*
Conidia 1 septate, 45 - 75 × 3. 5 - 4μm.

Fig. 66 *Geotrichum* sp.
Conidia (arthrospores) hyaline, 1-celled, short cylindrical with truncate ends, formed by segmentation of hyphae; mostly saprophtic, common in soil.

Monilia sp.
Conidia (blastospores) pink, gray, or tan in mass, 1-celled, short cylindric to rounded, in acropetalous branched chains.

Fig. 67 *Tryblidiopsis pinastri*
Ascospores colourless, thin-walled, smooth, clavate, 1-septate, 22 - 32 × 5 - 7μm, embedded on a mucous sheath, 3 - 5μm thick.

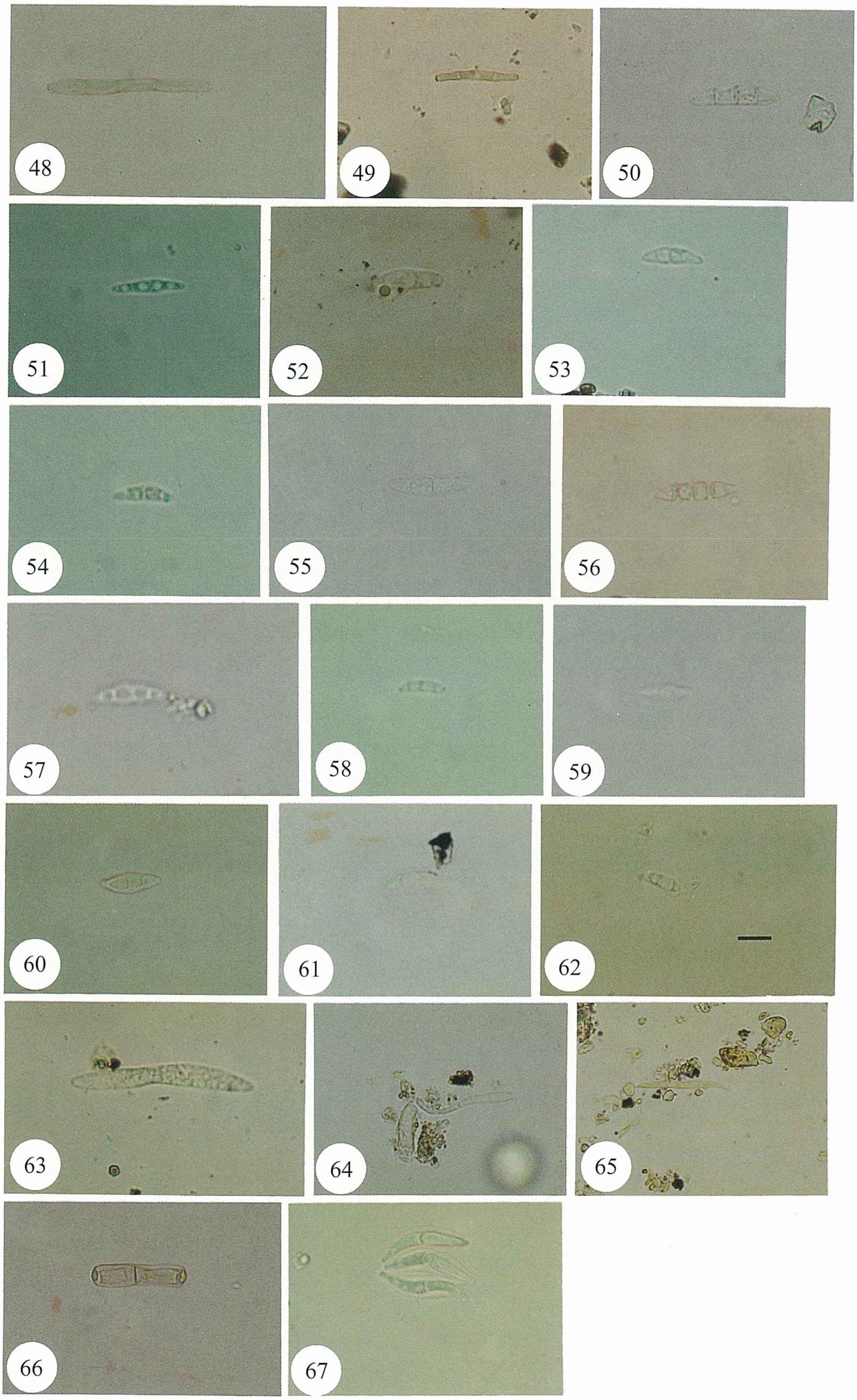
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Fig. 68 *Bertia moriformis*
Ascospores irregularly biseriate, sausage-shaped, 30 - 50 × 4 - 4. 5μm, hyaline, 1-septate.

Fig. 69 and 81 *Fusarium* sp.
Conidia (phialospores) hyaline, variable, principally of two kinds, often held in small moist heads; macroconidia several-celled, slightly curved or bent at the pointed ends, typically canoe-shaped; microconidia 1-celled, ovoid or oblong, borne singly or in chains; some conidia intermediate, 2- or 3-celled, oblong or slightly curved.

Fig. 70 *Cladosporiella cercosporicola*
Conidia 20 - 136 × 2 - 4. 5(rarely up to 5. 2) μm.

Fig. 71 and 72 *Leotia lubrica*
Ascospores slightly fusiform with rounded ends, often slightly curved, becoming 5 or 7-septate, about 20 - 25 × 5 - 6μm, hyaline; paraphyses slender, branched with clavate tips, hyaline.

Fig. 73 *Fusarium* sp.
Microdonidia hyaline, 1-celled, ovoid or oblong, borne singly or in chains; some conidia intermediate, 2- or 3-celled, oblong or slightly curved.

Fig. 74 and 78 *Fusarium solani*
Microconidia form abundantly in the aerial mycelium from elongated lateral phialides; they are hyaline, cylindrical wedge-shaped or allantoid, 9 - 16 × 2 - 4μm and may become 1 septate.

Fig. 75 *Cercophora mirabilis*
Ascospores initially 50 - 70 × 4 - 5μm; when mature, swollen brown cell 15 - 25 × 10 - 11μm; gelatinous appendages up to 50 × 2 - 3μm, often disappearing.

Fig. 76 *Cookeina insititia*
Ascospores fusiform, inequilateral, 40 - 49 × 10 - 11μm, hyaline, smooth, containing numerous small oil drops.

Fig. 77 *Dicephalospora rufocornea*
Ascospores long-fusiform, 34 - 51. 5 × 3 - 6μm, smooth, hyaline, guttulate, both ends are obtuse, with a gelatinous sheath.

Fig. 79 *Hysterographium* sp.
Ascospores dictyosporous, spindle-shaped, elliptical, oval, oblong to cylindrical, brown.

Fig. 80 *Leptosphaerulina trifolii*
Ascospores eight, irregularly arranged in the ascus, oval, clavate or ellipsoid, 3 - 4 transversely and 0 - 2 vertically septate and hyaline, when mature often becoming slightly colored, 25 - 50 × 10 - 20μm.

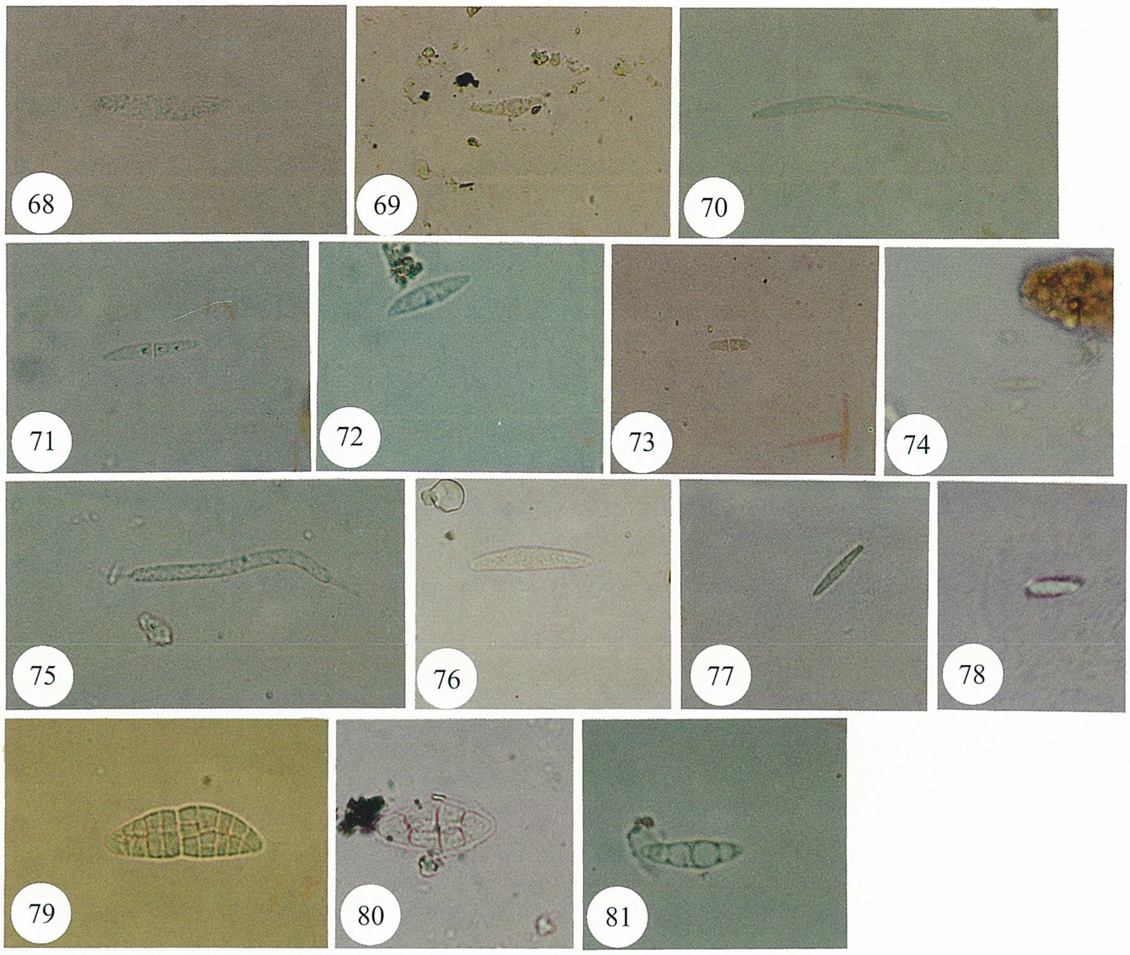
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Fig. 82 *Leptosphaeria luctuosa*
Ascospores 5-septate, 28 - 36 × 5. 5 - 6. 5μm.

Fig. 83 and 84 *Dacrymyces palmatus (Schw) Bres.*
Basidiospores ellipsoid, inequilateral, up to 7 - 8-septate, smooth, thin or slightly thick, 16 - 21 × 7 - 9μm, guttulate.

Fig. 85 *Drechslera specifera*
Conidia brown, cylindrical with rounded ends, medium brown, except for narrow subhyaline spots at the extremites, 20 - 40 × 9 - 14μm, with 3 pseudosepta.

Fig. 86 *Schizosaccharomyces octosporus*
Ascospores globose to oval, 1-celled, hyaline, smooth, 20 × 6μm.

Fig. 87 and 89 *Calonectria rigidiuscula*
Ascospores hyaline, ellipsoid to reniform with 3 transverse septa and faint longitudinal striations when mature; they measure 22 - 28 × 7 - 10μm.

Fig. 88 and 90 *Fusarium* sp.
Conidia (phialospores) hyaline, variable, principally of two kinds, often held in small moist heads; macroconidia several-celled, slightly curved or bent at the pointed ends, typically canoe-shaped; microconidia 1-celled, ovoid or oblong, borne singly or in chains; some conidia intermediate, 2- or 3-celled, oblong or slightly curved.

Fig. 91 and 92 *Leotia lubrica Pers.*
Ascospores fusifrom, 17 - 24. 5 × 5 - 7. 5μm, smooth, hyaline, slightly curved, containing numerous oil drops, 0-septate at first then becoming 3-septate in mature.

Fig. 93 and 96 *Pyricularia oryzae*
Conidia pyriform to obclavate, narrowed toward tip, rounded at base, 2-septate, rarely 1- or 3-septate, hyaline to pale olive, 14 - 40 × 6 - 13μm, with a distinct protruding basal hilum.

Fig. 94 *Sydowiella fenestrans*
Ascospores 1-seriate, elliptical to bean-shaped, 19 - 24 × 8 - 9μm, hyaline, with a median septum and usually slightly constricted at that level.

Fig. 95 *Monilia* sp.
Conidia arthrospores, hyaline, 20 × 13μm.

Fig. 97 *Gibberella fujikuroi*
Ascospores hyaline, elliptical, often remaining 1-septate but occasionally becoming 3-septate, 4 -18 × 4. 5 - 6μm.

Fig. 98 *Fusarium chlamydosporum*
Macroconidia rarely produced and appearing only on sporodochial, phialides 3(-5)-septate, slightly curved, 30 - 38 × 3 - 4. 5μm. Microconidia fusiform or clavate, 0 - 1 septate, 18 × 5μm.

Fig. 99 *Mycosphaerella marksii*
Ascospores 2-multi-seriate, hyaline, straight or slightly curved, fusiform,1-septate, mostly not constricted at the median septum, widest in middle of apical cell, which is slightly irregular, basal cell slightly tapering to one end, (12. 5-)18(-22. 5) × (2. 5-)3(-5) μm, basal cell 6 - 13 × 2. 5 - 4. 5μm, apical cell 6 - 12 × 3 - 5μm.

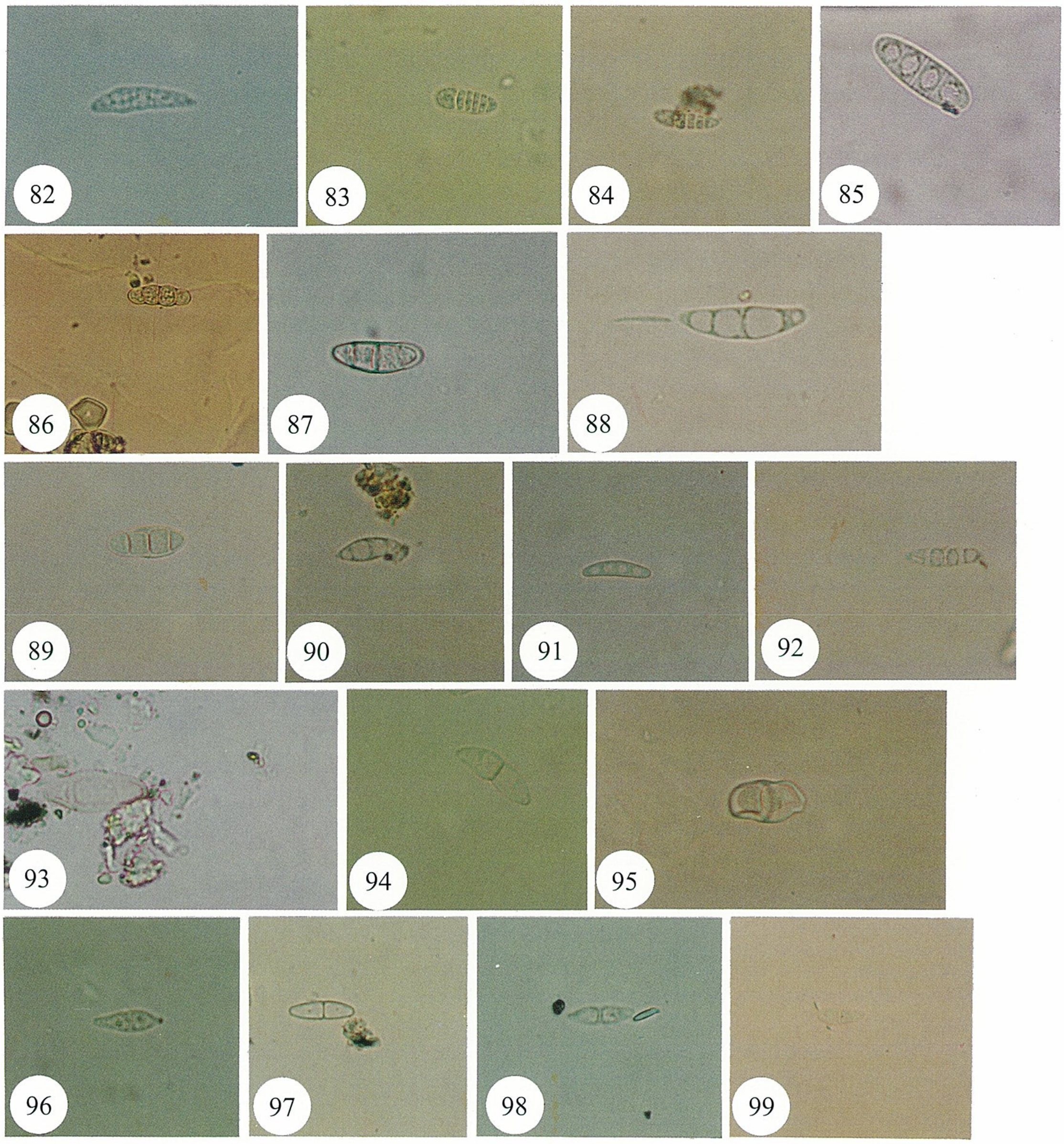
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Fig. 100 *Nectria galligena*
Ascospores oval, ellipsoid or spindle shaped and slightly constricted at the central septum, Smooth to verrucose, hyaline, 14 - 22 × 6 - 9μm.

Fig. 101, 104 and 108 *Fusarium chlamydosporum*
Microconidia fusiform or clavate, 0 - 1-septate, 5. 0 - 20 × 2. 5 - 5. 0μm.

Fig. 102 *Saccharomycodes ludwigii*
Ascospores 1-celled, hyaline, globoe, smooth, normally conjugating in pairs inside the ascus, then producing a short germ tube that produces diploid somatic cells outside the ascus.

Fig. 103 *Gibberella fujikuroi*
Ascospores hyaline, elliptcial, often remaining 1-septate but occasionally becoming 3-septate, 14 - 18 × 4. 5 - 6μm.

Fig. 105 *Mycosphaerella suberosa*
Ascospores 2 - 3 seriate or irregularly arranged, oblique, overlapping, straight ellipsoid, obtuse at each end, hyaline to light brown, smooth, 1-septate, guttulate, slightly constricted at the median septum, widest in the middle of the upper cell, tapering more prominently at one end than the other, (10-)14(-17) × (3-)4. 5(-6) μm.

Fig. 106 and 107 *Fusarium babinda*
Microconidia hyaline, 0 - 1-septate, ovoid, ellipsoid to allantoid, 5 - 15 × 2 - 4μm. Swollen, globose/pyriform spores absent.

Fig. 109 *Oidium* sp.
Conidia (meristem arthrospores) cylindrical, 1-celled, hyaline, produced in basipetal chains.

Fig. 110 and 112 *Sphaerotheca* sp.
Ascospores hyaline, 1-celled, ellipsoidal to barrel shaped, with fibrosin granules.

Fig. 111 *Galiella javanica*
Ascospores long ellipsoid, 25 - 37 × 11 - 15μm, granulate, hyaline, containing numerous oil globules, pale brown in mature.

Fig. 113 *Puccinia arachidis*
Urediospores ellipsoidal, 22 - 30 × 18 - 22μm; wall sienna, finely echinulate, 1. 5 - 2μm thick; pores mostly 2, occasionally 3 or 4 equatorial.

Fig. 114 and 115 *Sarcoscypha occidentalis Sacc.*
Ascospores broadly ellipsoid or oblong, 17 - 30 × 7 - 10μm, hyaline, smooth, containing 2 - 3 oil drops.

Fig. 116 *Blumeriella haddenii*
Ascospores 1-celled, but sometimes with a median septum, hyaline, ellipsoid to elongate-fusiform, narrower in middle, 20μm long.

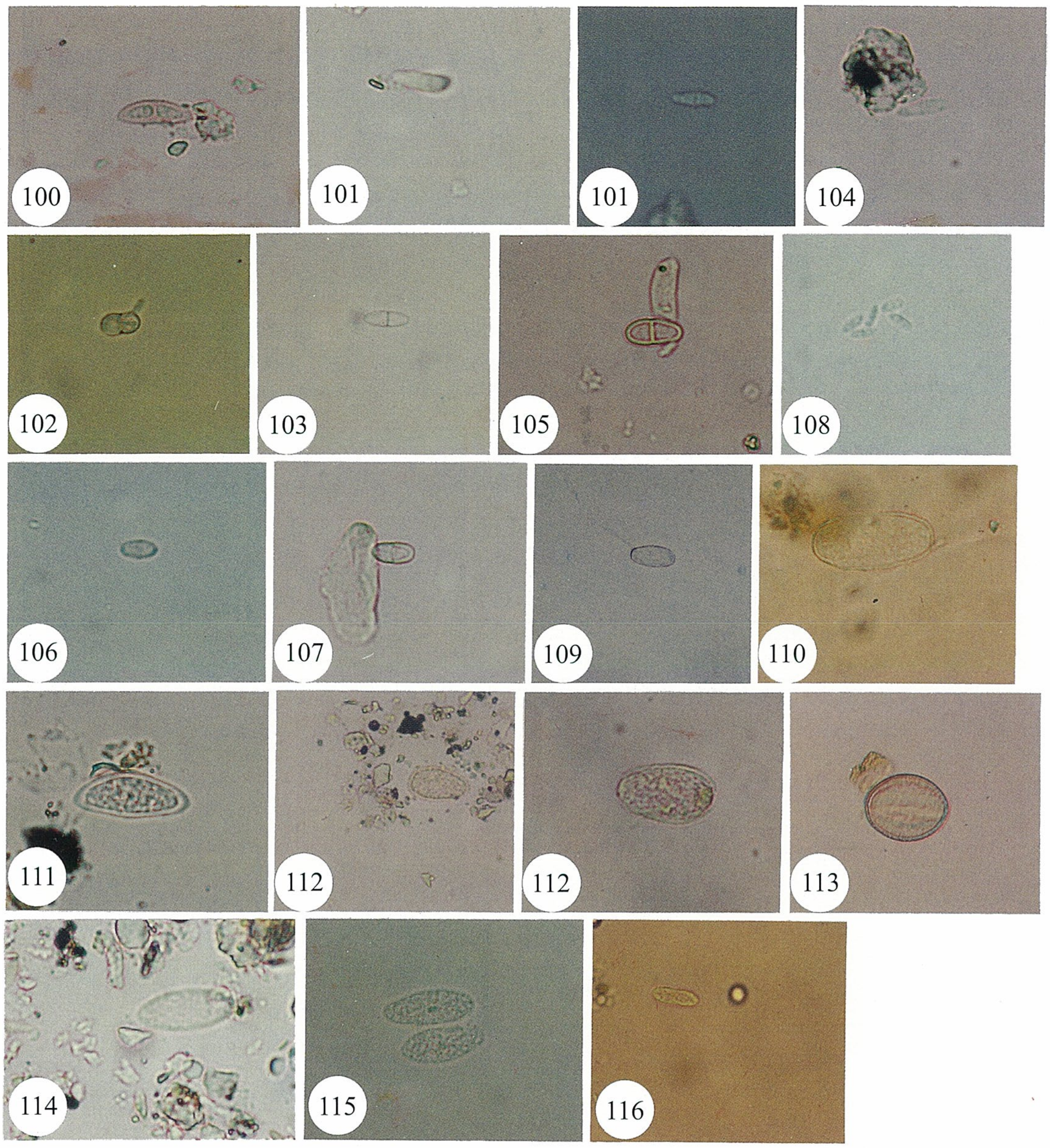
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Fig. 117 *Trabutia quercina*
Ascospores arranged irregularly , 18 - 23(-28) × 6. 5 - 8. 5μm, fusiform to ellipsoidal-fusiform, often curved (with one face ± flat), fairly thin-walled, hyaline, aseptate, smooth, without a gelatinous sheath or appendages.

Fig. 118 *Uromyces dolicholi*
Uredospores globose, 18 - 12μm diam., wall cinnamon-brown, 15 - 2μm thick, echinulate, pores 3, occasionally 4, equatorial.

Fig. 119 *Leotia lubrica*
Ascospores fusiform, 17 - 24. 5 × 5 - 7. 5μm, smooth, hyaline, slightly curved, containing numerous oil drops, 0-septate at first then becoming 3-septate in mature.

Fig. 120 and 122 *Sarcoscypha occidentalis*
Ascospores broadly ellipsoid or oblong, 17 - 30 × 7 - 10μm, hyaline, smooth, containing 2 - 3 oil drops.

Fig. 121 *Ceratocystis fimbriata*
Chlamydospores terminal in chains, obovate to oval, thick-walled, brown, 9 - 18 × 6 - 13μm.

Fig. 123 *Coccodiella arundinariae*
Ascospores arranged biseriately, (14. 5-)16. 5 - 22. 5 × 4 - 5μm, fusiform-ellipsoidal to cylindric-ellipsoidal, often slightly curved (with one lateral face ± flat), thin-and smooth-walled, hyaline, aseptate, without a gelatinous sheath.

Fig. 124 and 125 *Heterochaete delicata*
Basidiospores allantoid, smooth, guttulate, 14 - 20 × 6 - 7. 5μm, thin wall.

Fig. 126 *Botryosphaeria* sp.
Ascospores hyaline, cylindrical to falcate.

Fig. 127 and 130 *Fusarium poae*
The microconidia are abundant, ampulliform, 8 - 12 × 7-10μm to globose or oval in shape, 7 - 10μm diam, 0 - 1 septate, and often have a distinct papilla.
Amanita ceciliae
Basidiospores subglobose, hyaline, smooth, 11. 3(-12. 9) -16. 1 × 9. 6(-11. 9) - 14. 5μm.

Fig. 128 *Leucocoprinus fragilissimus*
Basidiospores ellipsoidal ro lemonoid, hyaline, smooth, amyloid, guttulate, 9 - 13 × 6 - 8μm, with a germ pore.

Fig. 129 *Polystigma rubrum*
Ascospores arranged biseriately, 10. 5 - 14 × 3. 5 - 4. 5(-5. 5) μm, cylindric-ellipsoidal, hyaline, aseptate, thin-and smooth-walled without a gelatinous sheath.

Fig. 131 and 132 *Fusarium solani*
Microconidia form abundantly in the aerial mycelium from elongated lateral phialides; they are hyaline, cylindrical wedge-shaped or allantoid, 9 - 16 × 2 - 4μm and may become 1 septate.

Fig. 133 *Mortierella alpina*
Sporangiospores (5-)7 - 9(-10)μm diam. (12 - 22 × 7 - 11μm in single-spores sporangia), elliposoid, smooth, hyaline.

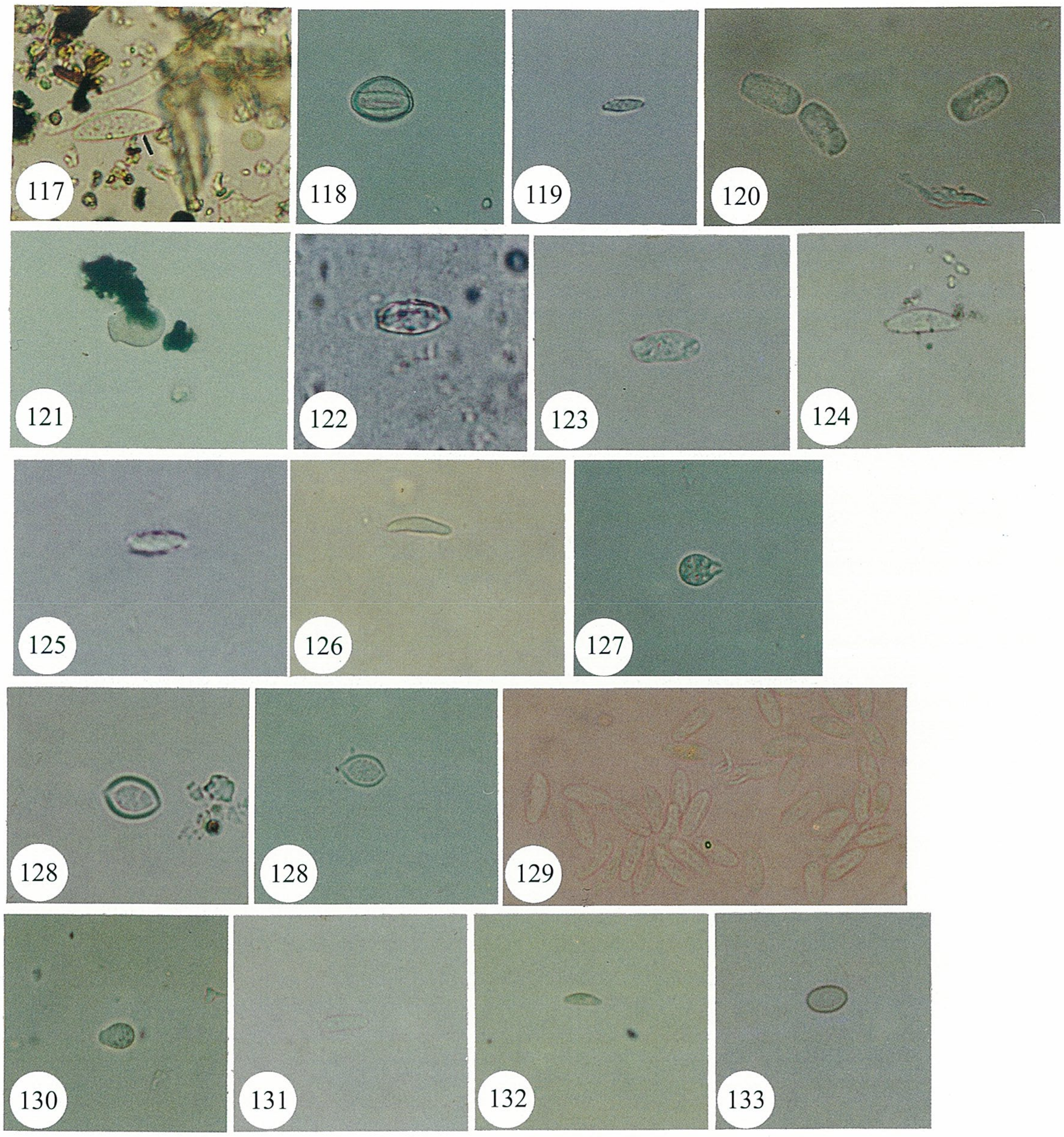
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Fig. 134 *Fusarium beomiforme*
Two forms of microconidia are produced; a). abundant ovoid to cylindrical microconidia, 5 -15 × 1. 5 - 3μm. b). less abundant, larger (9 - 2 0 × 6 - 5μm), globose to napiform microconidia, typically vacuolate.

Fig. 135 *Fusarium heteronemum*
Microconidia cylindrical with rounded ends, aseptate, 4 - 8 × 2 - 3μm.

Fig. 136 *Marasmius oreades*
Spores smooth, without germ pore, 5. 9 - 9. 1 × 3. 9 - 5. 2μm, L/W=1. 3 - 1. 9, hyaline, not amyloid.

Fig. 137 *Fusarium babinda*
Microconidia hyaline, 0 - 1 septate, ovoid, ellipsoid to allantoid, 5 - 15 × 2 - 4μm.

Fig. 138 and 139 *Penicillium* sp.
Conidia (phialospores) hyaline or brightly colored in mass, 1-celled, mostly globose or ovoid, in dry basipetal chains.

Fig. 140 *Penicillium rolfsii*
Conidia predominantly ellipsoidal, 2. 4 - 5. 6 × 2. 0 - 4. 0μm, smooth to finely roughened, thick walled, borne on loosely irregular columns.

Fig. 141 *Collybia cookei*
Spores smooth, without germ pore, 3. 9 - 5. 2 × 2. 6 - 3. 3μm, L/W=1. 4 - 1. 8, hyaline, not amyloid.

Fig. 142 *Acremonium* sp.
Conidia are oblong (2 - 3 × 4 - 8μm) and usually one celled but occasionally two celled. The conidia form easily disrupted clusters at the tips of the phialides.

Fig. 143 *Cyathus stercoreus*
Basidiospores wide globose to spherical, 25 - 42 × 25 - 38μm, hyaline, nonamyloid, smooth and thick wall.

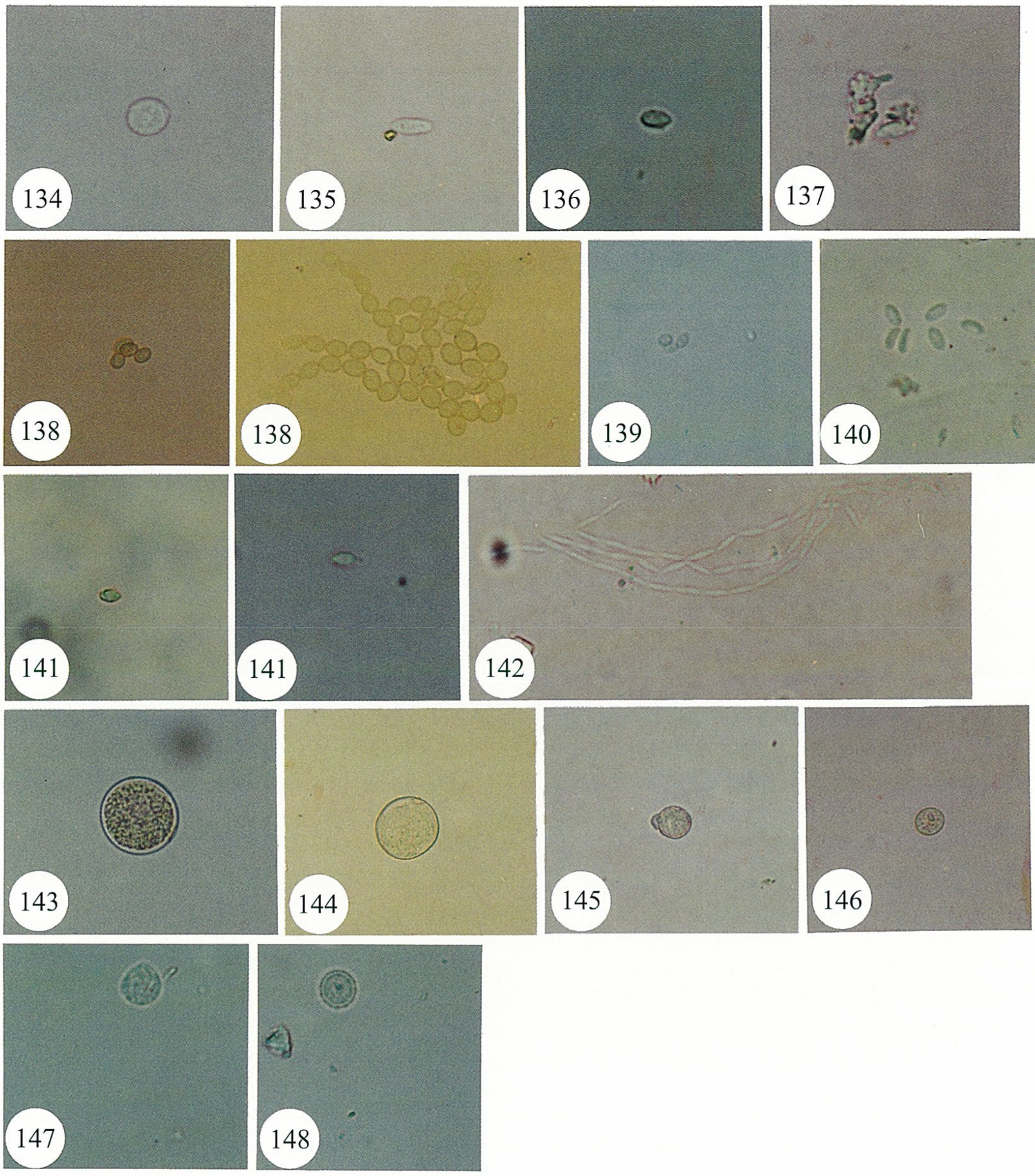
Fig. 144 *Puccinia asparagi*
Uredospores globose to ellipsoid, 19 - 30 × 18 - 25μm, wall golden, 2μm thick, minutely, echinulate, pores equatorial;.

Fig. 145 *Amanita ceciliae*
Basidiospores sphaerical, hyaline, smooth, nonamyloid, 11.3- (12. 9±0. 4) - 16. 1 × 9. 6 - (11. 9 ± 0. 3) - 14. 5μm.

Fig. 146 *Mortierella hyalina*
Sporangiospores globose, (6-)8 - 14(-20)μm diam., smooth, hyaline.

Fig. 147 *Fusarium* sp.
Microconidia 1-celled, ovoid or oblong, borne singly or in chains.

Fig. 148 *Mortierella globulifera*
Sporangiospore, 4 - 9μm diam., globose to subglobose, echinulate, hyaline.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